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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,666	11/10/2005	Son-Ha Giang	Serie 6288	8573
40582	7590	01/06/2009	EXAMINER	
AIR LIQUIDE			SAVANI, AVINASH A	
Intellectual Property				
2700 POST OAK BOULEVARD, SUITE 1800			ART UNIT	PAPER NUMBER
HOUSTON, TX 77056			3749	
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			01/06/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/556,666	GIANG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	AVINASH SAVANI	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 07 October 2008.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 28-31 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 28-31 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 07 October 2008 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

### ***Status of Claims***

1. The following action is in response to the applicant's Amendment dated 10/7/2008, that was in response to the Office action dated 7/9/2008. Claims 17-27, 32 and 33 are withdrawn, claims 28-31 remain in the application.

### ***Response to Arguments***

2. Applicant's arguments filed 10/7/2008 have been fully considered but they are not persuasive. Reasons for arguments being unpersuasive will be reiterated in the rejection contents.

3. The applicant respectfully submits that there is not an additional gas feed means. The examiner respectfully disagrees with regard to the current interpretation of the claim. First, the additional gas feed means is understood to allow a premixing before combustion as an additional gas is used to complement the oxygen [0018 of applicant's specification]. Currently as claimed, there is a "means" for carrying out this function, and as previously cited in the office action, there is a means for doing this with respect to the off setting of the various feed means. Due to this offsetting, there is a premix means, and there is a complementary means to the burner fuels. If the means for was changed to a tube or additional conduit to carry out this function then the examiner would agree that this limitation is not present, however, due to the means for supplying the additional gas, it is believed that via the off setting of the feed means, there is a premixing and therefore there is an additional gas feed means in the broadest sense of the claim. For this reason, the original rejection is held and emphasis is added that the offsetting of the

conduits allows for a premixing and therefore is interpreted as an additional gas feed means.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Iatrides et al [5743723].
3. With respect to claim 28, Iatrides et al discloses: An apparatus which may be used as a combustion system [see FIG 3] said apparatus comprising: a) an oxyfuel burner (10); b) a means for feeding said burner with fuel (14); c) a means for feeding said burner with an oxidizer (12); d) an oxygen feed means (16); e) an additional gas feed means, wherein said oxidizer feed means cooperates with said oxygen feed means and said additional gas feed means [col 5, line 63-67, col 6, line 1-6]; f) a means for measuring a flow rate [ see FIG 3, col 4, line 40-45], wherein said flow rate comprises at least one member selected from the group consisting of: 1) said oxygen's flow rate; and 2) said fuel's flow rate; and g) a means for controlling said additional gas's flow rate (35). Due to the spaced apart relationship, there is a premixing of fuels before ignition, thereby providing an additional gas feed means in the broadest sense. It is believed that since there is carbon or soot produced, there is a complement to the

oxygen to provide for a more efficient burner means. The additional gas feed means is not limited to a separate supply line/conduit/tube in interpretation.

4. With respect to claim 29, the claim is interpreted as the flow rate of the additional gas is adjusted according to the flow rate of the oxygen or fuel flow rate, and is increased or decreased accordingly. Therefore, Iatrides discloses: The apparatus of claim 28, wherein said means for controlling said additional gas's flow rate is slaved to said means for measuring a flow rate [col 4, line 28-37].

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iatrides ['723], further in view of Kurata [6004128].

7. With respect to claim 30, Iatrides discloses the apparatus of claim 28, wherein there is a means for controlling said additional gas's flow, but it is not disclosed that the flow rate is controlled by a pressure regulator. Kurata teaches a similar combustion system using a regulator (36) to control the additional gas flow rate which also in turn regulates the pressure, which is what the pressure regulator is understood to do [col 4, line 33-52]. In view of Kurata, there is a pressure regulator controlling the flow rate of the additional gas. It would have been obvious to a person of ordinary skill in the art to control the additional gas flow rate with a pressure regulator because one of ordinary

skill recognized that the pressure of the incoming gas would need to be regulated in order to have a flame of the ideal temperature, since it is also known that pressure and temperature are directly related. The result of regulating the pressure is predictable in that the temperature after complete combustion of the products will be in range to produce a suitable flame.

8. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iatrides ['723], further in view of Versluis [5630408].

9. With respect to claim 31, Iatrides discloses the apparatus of claim 28, wherein there is a means for controlling said additional gas's flow, but it is not disclosed that the flow rate is controlled by a servovalve. Iatrides, however, discloses that any control system can be used to control the flow rate of the additional gas [col 4, line 40-44], therefore it is believed that one of ordinary skill in the art would recognize the different options of controlling the additional gas flow rate to regulate the pressure. Thus, Versluis teaches a similar device wherein the additional gas flow rate is controlled by a servo valve [col 47-54]. In view of Versluis, a servovalve is used to monitor pressure at a burner end. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have the additional gas flow rate controlled by a servovalve because it was recognized that burner pressure must be controlled.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AVINASH SAVANI whose telephone number is (571)270-3762. The examiner can normally be reached on Monday- Friday, alternate Fridays off, 7:30-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Avinash Savani/  
Examiner, Art Unit 3749

/Steven B. McAllister/  
Supervisory Patent Examiner, Art Unit 3749

/A. S./  
1/2/2009